

Elo LCD Touchmonitor User Guide

Version 1.0

Models

ETL121K/P-6PWA-1

ETL121K/P-7PWA-1

ETL121K/P-8PWA-1

ETL150K/P-6PWA-1

ETL150K/P-7PWA-1

ETL150K/P-8PWA-1

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A Raychem Company

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Chapter 1

Introduction

Congratulations on your purchase of an Elo TouchSystems LCD touchmonitor. Your new high-resolution touchmonitor combines the reliable performance of Elo's touch technology with the latest advances in LCD display design. This combination of features creates a natural flow of information between a user and your touchmonitor.

About This Manual

This manual includes assembly instructions, touch technology data, on-screen adjustment instructions and technical specifications for Elo TouchSystems' 12.1-inch and 15-inch LCD Touchmonitors.

- ❑ **Chapter 1:** Touchmonitor features and contacting Customer Service.
- ❑ **Chapter 2:** Unpacking your new touchmonitor and touchmonitor installation.
- ❑ **Chapter 3:** LCD Touchmonitor operation and adjustments.
- ❑ **Appendix A:** Troubleshooting tips.
- ❑ **Appendix B:** Overview of touch technology including sections on IntelliTouch and SecureTouch touchscreens.
- ❑ **Appendix C:** Native Resolution.
- ❑ **Appendix D:** LCD Touchmonitor safety precautions.
- ❑ **Appendix E:** LCD Touchmonitor specifications.

LCD Touchmonitor Features

- ❑ 12.1-inch (246.0 x 184.5 mm useful) or 15-inch (304.1 x 228.1 mm useful) diagonal screens.

- ❑ Compatible with VGA, Super VGA, and XGA (15-inch only) video standards.
- ❑ High brightness pictures for operation in brightly lit environments.
- ❑ Digital “on-screen” adjustments which remain in the touchmonitor’s memory allowing for easy setup and maintenance-free operation.
- ❑ Durable Elo TouchSystem’s LCD Touchmonitor metal frame construction.
- ❑ Elo TouchSystems patented touchscreen technology.

Contacting Elo

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Chapter 2

Installation

Unpacking Your Touchmonitor

Carefully unpack your touchmonitor. Check that you have everything you need and that none of the components have been damaged during shipping. Save the box and packaging in case you need to ship back the touchmonitor.

Chapter 2 : Installation



LCD TouchMonitor



AC Power cord



Video Cable (15-pin)

Touchscreen Cables



Serial (RS-232)
cable (9-pin)

AND



USB cable



OSD module



TouchTools CD

Basic Assembly Instructions

Read the section about touchmonitor safety in Appendix D before installing your touchmonitor. Also read the section about designing your kiosk cabinet found in Appendix B.

Your touchmonitor is designed to operate from 100 to 240 VAC at 50 to 60 Hz. It automatically senses and adjusts for the supply voltage.

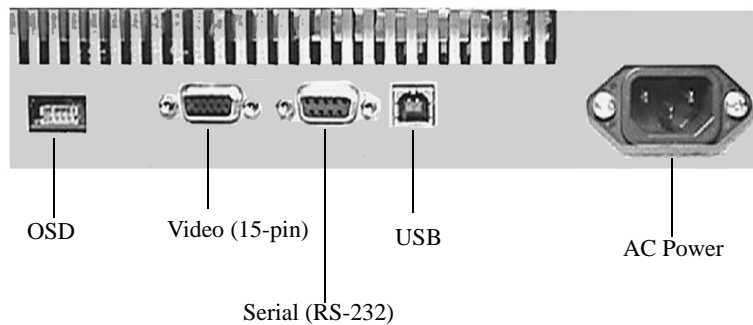


Do not install your touchmonitor where it will be subject to direct sunlight, excessive dust, mechanical vibration or shock, or near heat sources such as radiators or air ducts.

Pre-install Steps

1. Set the touchmonitor into the kiosk cabinet before connecting the cables and plugging your PC into the wall socket. See Chapter 4 for information on making any necessary display adjustments.
2. After you make your display adjustments, settle the touchmonitor into the cabinet.

Connecting the Cables



Your touchmonitor comes with two touchscreen connector cables: **Serial** (RS-232) cable *and* **USB** cable (For Windows 98 computers only.)

1. Before connecting the cables to your touchmonitor and PC, be sure that the computer and the touchmonitor are turned off.
2. Connect the ferrite end of the video cable to the video connector on your PC. Connect the other end of the video cable to the touchmonitor. Secure the cable to your touchmonitor and PC by turning the screws on the connector.
3. Connect the power cord to the AC connector on your touchmonitor. To protect your equipment against risk of damage from electrical surges in the power line, plug the touchmonitor's power cord into a surge protector, and then connect the power strip to a grounded (three-pronged) AC electrical outlet.
4. Connect either the Serial cable or the USB cable. Do not connect both cables.
 - ❑ If you are using a **serial** connection, connect the female end of the serial (RS-232) cable to the serial port on the back of your PC. Connect the male end of the cable to the touchscreen connector on your touchmonitor.

- ❑ If your PC is running Windows 98 you can connect the **USB** cable to the USB port. The touchscreen cable connectors should fit snugly into the connectors on your touchmonitor and PC.

5. Power on your PC. After a brief pause the picture should appear.



Unless you disconnect the power cord from the monitor or from the wall, your touchmonitor will always remain in power-on mode.

6. Install the driver software using the procedure described in the documentation accompanying the driver disk.

Chapter 3

Operation

Touchmonitor Controls and Adjustments

By design your LCD touchmonitor should not require any adjustments. The factory settings will give you optimum video results with most standard PC video display adapters.

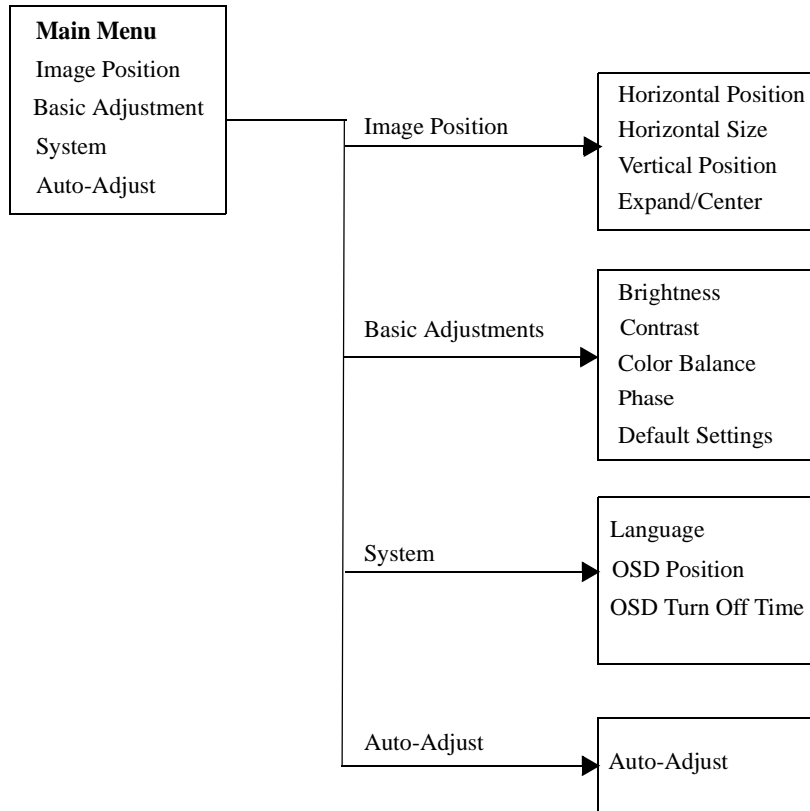
However, after connecting your touchmonitor, should you notice picture instability, jitter, and/or a lack of good contrast, follow the directions in this chapter to optimize the settings.

All adjustments you make to the controls are automatically memorized. This feature saves you from having to reset your choices every time you unplug or power your touchmonitor off and on. If there is a power failure your touchmonitor settings will not default to the factory specifications.



IMPORTANT: Do not remove the LCD touchmonitor cover as there are high voltages and sharp metal edges inside the touchmonitor cover. Removing the touchmonitor cover will void the warranty.

On-Screen Menus: Quick Glance



Adjustments

All adjustments are made by using the OSD module.



All menu items can be selected by using the following buttons on the OSD module:

- ☐ **RST**-Resets all controls to default factory settings.
- ☐ **UP**-Moves between menu selections or increases selected setting.
- ☐ **DN**-Moves between menu selections or decreases selected setting.
- ☐ **SEL**-Activates and selects the on-screen menus.

Basic Adjustments

To make adjustments:

1. Connect the OSD module and press the **SEL** button. The main menu will be displayed.



You can connect the OSD module to your monitor any time, even while it is powered on.

2. From the main menu you can choose:
 - ☐ Basic Adjustment
 - ☐ Image Position
 - ☐ System
 - ☐ Auto-Adjust
3. To exit the menu, highlight the Exit menu option and press the **SEL** button.

Auto-Adjust

Auto-Adjust automatically optimizes a number of video characteristics such as, vertical, horizontal, size and positioning as well as, contrast and phase settings. This is accomplished by analyzing the dynamic characteristics of the video adapter board in the host PC. (This is not to be confused with the factory reset option.)

To Auto-adjust the video screen:

1. Highlight the Auto-adjust menu option and press the **SEL** button. The screen will jitter momentarily as it adjusts.
2. To exit the menu, highlight the Exit menu option and press the **SEL** button.

If needed use the “Phase” settings to optimize the video quality.

Brightness

The brightness adjustment will affect the “backlight” brightness setting.



Raising the brightness to maximum levels will degrade the life of the backlight.

1. Highlight the Brightness menu option and press the **SEL** button. A Brightness gauge will display. The gauge will indicate a numeric value which will change as you increase or decrease the brightness.
2. By using the **UP** and **DN** buttons, adjust the brightness.
3. When you have the brightness at the desired level press the **SEL** button.
4. To exit the menu highlight the Exit menu option and press the **SEL** button.

Contrast

The contrast function allows you to adjust the image crispness. Contrast adjusts the difference between black and white shades.

To adjust the contrast:

1. Highlight the Contrast menu option and press the **SEL** button. A Contrast gauge will display. The gauge will indicate a numeric value which will change as you increase or decrease the contrast.
2. By using the **UP** and **DN** buttons adjust the contrast.
3. When you have the contrast at the desired level, press the **SEL** button.
4. To exit the menu highlight the Exit menu option and press the **SEL** button.

Color Balance

The color balance function allows you to adjust the RGB (red, green, blue) colors in order to obtain desirable color temperature.



Color balance is a factory setting and seldom requires adjustment.

To adjust the color balance:

1. Highlight the Color Balance menu option and press the **SEL** button. Another menu will display with the following menu items:
 - ☐ Contrast Red
 - ☐ Contrast Green
 - ☐ Contrast Blue
 - ☐ Exit
2. Highlight the color contrast menu option you want to adjust and press the **SEL** button. When you select any of the contrast options a contrast gauge will display.
3. By using the **UP** and **DN** buttons adjust the color contrast level.
4. When you have the contrast at the desired level, press the **SEL** button.
5. To exit the menu, highlight the Exit menu option and press the **SEL** button.

Phase

The phase function is similar to the tracking control on a VCR. If your VCR displays a jumpy or jittery picture, the tracking control allows you to adjust the picture. The phase function allows you to optimize the video timing and thus minimize jitter in the displayed video image.



Phase is factory set and seldom requires adjustment.

To adjust the phase:

1. Highlight the Phase menu option and press the **SEL** button. A Phase gauge will display. The gauge will indicate a numeric value which will change as you increase or decrease the contrast.
2. By using the **UP** and **DN** buttons adjust the phase.
3. When you have the phase at the desired level, press the **SEL** button.
4. To exit the menu, highlight the Exit menu option and press the **SEL** button.

Default Settings

The default settings function allows you to restore factory default settings stored in the touchmonitor's memory. These defaults cannot be overwritten.

To restore the default settings:

1. Highlight the Default Settings menu option and press the **SEL** button. All settings will be restored to their defaults.
2. Highlight the Exit menu option to return to the main window.

Image Position

The image position menu options allow you to center the active video area.

To access the Image Position menu options:

1. From the main menu, highlight Image Position and press the **SEL** button.
2. You can choose the following menu options:
 - ☐ Horizontal Position
 - ☐ Horizontal Size
 - ☐ Vertical Position
 - ☐ Expand/Center
3. To exit from the menu, highlight the Exit menu option and press the **SEL** button.

Horizontal Position

The horizontal position function allows you to adjust the horizontal image position.

To adjust the horizontal position:

1. From the main menu, highlight the Image Position option and press the **SEL** button.
2. Highlight the Horizontal Position menu item and press the **SEL** button. The Horizontal Position gauge will display.
3. By using the **UP** and **DN** buttons adjust the horizontal position.
4. When you have the position at the desired level, press the **SEL** button.
5. To exit the menu, highlight the Exit menu option and press the **SEL** button.

Horizontal Size

The horizontal size function allows you to adjust the horizontal image size.

To adjust the horizontal size:

1. From the main menu, highlight the Image Position option and press the **SEL** button.

2. Highlight the Horizontal Size option and press the **SEL** button. The Horizontal Size gauge will display.
3. By using the **UP** and **DN** buttons adjust the horizontal size.
4. When you have the size at the desired level, press the **SEL** button.
5. To exit the menu, highlight the Exit menu option and press the **SEL** button.

Vertical Position

The vertical position function allows you to adjust the vertical image position.

To adjust the vertical position:

1. From the main menu, highlight the Image Position option and press the **SEL** button.
2. Highlight the Vertical Position option and press the **SEL** button. The Vertical Position gauge will display.
3. By using the **UP** and **DN** buttons adjust the vertical size.
4. When you have the size at the desired level, press the **SEL** button.
5. To exit the menu, highlight the Exit menu option and press the **SEL** button.

Expand/Center

This function is not available at this time.

System

The system menu functions allow you to change system features.

To access the System menu options:

1. From the main menu, highlight System and press the **SEL** button.
2. You can choose the following menu options:

- ☐ Language
- ☐ OSD Position
- ☐ OSD Turnoff Time

Below these menu options the screen resolution, horizontal and vertical settings are displayed. If the screen resolution on your PC is changed, that change will be reflected here.

3. To exit from the menu, highlight the Exit menu option and press the **SEL** button.

Language

You are able to change the language of all menu items within the main menu.

To change the language:

1. Highlight the Language menu option and press the **SEL** button to display the language menu.
2. Highlight the language you want displayed then press the **SEL** button.

The menu items will change to the language you have selected.

3. To exit the menu, highlight the Exit menu option and press the **SEL** button.

OSD Position

The OSD Position option allows you to set the screen location where the on-screen menu appears.

To adjust the OSD position:

1. Highlight the OSD Position menu option and press the **SEL** button.
2. A menu will display allowing you to choose a position on the screen where the on-screen menu will be displayed. Highlight the position you want and press the **SEL** button.

The menu will display in the position you selected.

3. To exit the menu, highlight the Exit menu option and press the **SEL** button.

OSD Turn Off Time

The OSD turn off time function allows you to set the time delay before the on-screen menus are deactivated.

To set the time delay:

1. Highlight the OSD turn off time menu option and press the **SEL** button. A menu will display allowing you to choose an increment of time in which the on-screen menu will be deactivated.
2. Highlight the increment you want then press the **SEL** button.
3. To exit the menu, highlight the Exit menu option and press the **SEL** button.

Care and Handling of Your Touchmonitor

The following tips will help you keep your LCD touchmonitor functioning at the optimal level:



Protect your touchmonitor from extremely low or high temperatures (see Appendix E, Technical Specifications).



Keep your touchmonitor dry. Do not wash it with a wet cloth or pour fluid into it.



Check your touchmonitor for condensation. If condensation develops, do not power your touchmonitor on until the condensation evaporates.



Protect your touchmonitor from being bumped or dropped.



Keep your touchmonitor away from dust, sand and dirt.



Keep your touchmonitor away from humid environments.

Cleaning Your LCD Touchmonitor

Prevent damage to your touchmonitor (and PC) by powering off the computer system and disconnecting the touchmonitor from the AC outlet before you clean it. After you finish cleaning, make sure the touchmonitor is completely dry before you reconnect the cables and power it on. Do not apply liquid or aerosol spray cleaners directly on the screen or cabinet. Do not use any type of abrasive pad, alkaline cleaner, scouring powder or solvent (such as alcohol or benzine) to clean your touchmonitor. Avoid getting liquids inside your touchmonitor. If liquid does get inside, have a qualified service technician check it before you power it on again.

Screen

Remove dust and dirt by wiping the touchscreen with a soft, clean, lint-free cloth. Moisten a soft cloth with an ammonia-based glass cleaner and use it to remove fingerprints and smudges.

Case

Clean the touchmonitor cabinet with a soft cloth slightly moistened with a mild detergent solution. Rinse the cloth with clear water, wring it dry, and wipe the cabinet to remove any detergent residue.

Appendix A

Troubleshooting

Problem:	Suggestion:
No picture	Your touchmonitor may not be getting power. Make certain that your power-strip is plugged into the wall socket and that the PC and touchmonitor are plugged in and powered on.
	Test power supply by trying different cables, a different wall outlet or plug another appliance into the outlet.
	Make certain the video cable is properly connected and that it is not damaged. Check for bent pins on the cable connectors.
	Ensure that your computer and video card are properly configured. (Consult video card documentation.)
Picture appears to be ghosting	Make certain there is a good connection between the touchmonitor and the computer.
Picture is not centered	Read about adjusting your touchmonitor picture (see Chapter 3) and make the appropriate adjustments.
Picture is “jittery”	Reset your phase setting (see Chapter 3).
Picture appears “washed out”	Re-adjust your brightness and contrast settings (see Chapter 3).
Picture not present or severely distorted	Verify your video display adapter settings are formatted for the correct resolution and vertical refresh rates (see Chapter 3).
Touch doesn’t work	Check to make sure cable is securely attached at both ends.

Technical Support

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Appendix B

Touch Technology

Touchscreens

Typically, people communicate with computers using a mouse, a keyboard or a combination of the two. Users who are not keyboard literate or mouse savvy can become frustrated with how long human-to-computer interactions take.

Computer literacy is learned. This is complicated by the fact that using a keyboard or a mouse is neither intuitive nor natural for most people. Touchscreens cut out the learning curve by eliminating keyboard/mouse intermediaries and allowing a natural flow of information to develop between a user and a computer.

When a user wants to access information or perform a function on a computer with a touchscreen installed, a touch does the job that often complicated keyboard interactions or clumsy mice movements used to do—only faster and more accurately. The beauty and power of a touchscreen is that users do not have to think, they just do.

Touchscreens speed up user/computer interactions. People get what they want faster and are more satisfied with the process. A clumsy, frustrating experience with a computer during a transaction can create dissatisfaction for your customer. This negative atmosphere can transfer itself to your product or service. Touchscreens help eliminate unpleasant transactions by creating a natural flow of information that enhances your product or service.

IntelliTouch

IntelliTouch uses Elo's patented Surface Wave Technology to provide superior image clarity, stable drift-free operation, and a durable surface that is unaffected by scratches. With IntelliTouch you get fast, accurate

response to soft stylus stimulation (finger, gloved hand, pencil eraser) that is also sensitive to pressure. For example, a customer in a department store could scroll through a product catalog by increasing or decreasing pressure on an icon. IntelliTouch's pressure sensitivity increases the intuitive nature of a user/touchscreen interaction by allowing for increased selectivity.

An IntelliTouch touchscreen is a great choice for point-of-information or public access applications such as the following:

- ☐ Point-of-information kiosks
- ☐ Vending
- ☐ Electronic Catalogs
- ☐ In-store locators
- ☐ Gaming and lottery
- ☐ Banking/financial transactions
- ☐ Ticket sales
- ☐ Interactive education
- ☐ Multimedia demonstrations

AccuTouch

Elo's patented five-wire resistive technology makes AccuTouch products unmatched for durability and accuracy. Touch an AccuTouch screen with a finger, gloved hand, stylus, fingernail or even a credit card, and you'll receive a fast accurate response—every time. The surface of an AccuTouch touchscreen is scratch-resistant and can withstand spills and other types of wear and tear that often occur in heavy-usage environments.

An AccuTouch touchscreen is best used for clerk or employee-activated applications such as:

- ☐ Industrial process control
- ☐ Handheld computers
- ☐ Medical equipment
- ☐ Point-of-sale terminals
- ☐ Transportation

Kiosk Touchmonitors

Kiosks are all around us—whether we notice them or not. The stand in the middle of a hotel lobby offering up piles of brochures is a kiosk. The booth in the airport where you buy your pre-flight gum is a kiosk. A kiosk is a small pavilion with one or more open sides. Kiosks function as newsstands, coffee stands and point-of-information booths—and they are everywhere.

Adding a touchmonitor to a kiosk brings a new dimension of functionality to it. For example, a kiosk touchmonitor can sell airline or theater tickets, give information or directions in a museum or hotel, act as an ATM to process bank transactions and demonstrate products. Since kiosks do not take up much space they are a cost efficient addition to your work force.

When you place a computer and touchmonitor into a kiosk cabinet, you want it to remain trouble-free for as long as possible. Elo's technical expertise and high manufacturing standards go into creating a kiosk touchmonitor that will withstand stress and succeed in a public access context.

The custom designed metal chassis serves as a protective structure for the touchscreen and its bezel. The flat touchmonitor bezel is sealed to the touchscreen in order to protect the touchmonitor electronics from splashed liquids, dirt and dust.

Elo designed its kiosk touchmonitor to allow for creativity in your cabinet plans. Elo's kiosk touchmonitors fit into your cabinet designs, not the other way around.

Cabinet Design

Give some thought as to where you place the touchmonitor. The user should be able to easily reach the screen, so do not place the touchmonitor either too high or too low in the cabinet.

- ❑ Your touchmonitor and PC need to remain dry. If your kiosk must be located outdoors build a cabinet that protects your touchmonitor and PC from the weather (see Appendix E for touchmonitor environmental specifications).
- ❑ Build the kiosk cabinet so that it will support the weight of the touchmonitor (see Appendix E for touchmonitor specifications).
- ❑ To ensure trouble-free operation, make certain your kiosk touchmonitor is properly ventilated. Leave at least four inches of air space around the touchmonitor and make certain that the ventilation slots, located on the top and bottom of the touchmonitor, are not covered or blocked.
- ❑ The temperature around your touchmonitor needs to remain within the range specified in the tables in Appendix E. An increase in temperature will degrade your touchmonitor's performance and reduce its life span.
- ❑ Dust will damage your touchmonitor. You can prevent damage this damage by keeping the air ventilation intake away from the floor, or by adding a filter.
- ❑ You want your kiosk cabinet to make a good first impression on potential users. Choose a finish that does not show finger prints. Avoid polished stainless steel, chrome or glossy black paint.

Appendix C

Native Resolution

The native resolution of a monitor is the resolution level at which the LCD panel is designed to perform best. For Elo LCD monitors, the native resolution is 1024 x 768 for the XGA-15 inch size and 800 x 600 for the SVGA-12.1 inch size. In almost all cases, screen images look best when viewed at their native resolution. You can lower the resolution setting of a monitor but not increase it.

Input Video	12.1" LCD	15" LCD
640x480 (VGA)	<i>Transforms input format to 800x600</i>	<i>Transforms input format to 1024x768</i>
800x600 (SVGA)	<i>Displays in Native Resolution</i>	<i>Transforms input format to 1024x768</i>
1024x768 (XGA)	<i>No Display</i>	<i>Displays in Native Resolution</i>

The native resolution of an LCD is the actual number of pixels horizontally in the LCD by the number of pixels vertically in the LCD. LCD resolution is usually represented by the following symbols:

VGA	<i>640x480</i>
SVGA	<i>800x600</i>
XGA	<i>1024x768</i>
SXGA	<i>1280X1024</i>
UXGA	<i>1600X1200</i>

Appendix C : Native Resolution

As an example, a SVGA resolution LCD panel has 800 pixels horizontally by 600 pixels vertically. Input video is also represented by the same terms. XGA input video has a format of 1024 pixels horizontally by 768 pixels vertically. When the input pixels contained in the video input format match the native resolution of the panel, there is a one to one correspondence of mapping of input video pixels to LCD pixels. As an example, the pixel in 45 column and 26 row of the input video is in 45 column and 26 row of the LCD. For the case when the input video is at a lower resolution than the native resolution of the LCD, the direct correspondence between the video pixels and the LCD pixels is lost. The LCD controller can compute the correspondence between video pixels and LCD pixels using algorithms contained in the controller. The accuracy of the algorithms determines the fidelity of conversion of video pixels to LCD pixels. Poor fidelity conversion can result in artifacts in the LCD displayed image such as varying width characters.

Appendix D

Touchmonitor Safety

This manual contains information that is important for the proper setup and maintenance of your touchmonitor. Before setting up and powering on your new touchmonitor, read through this manual, especially Chapter 2 (Installation), and Chapter 3 (Operation).

1. To reduce the risk of electric shock, follow all safety notices and never open the touchmonitor case.
2. Your new touchmonitor is equipped with a 3-wire, grounding power cord. The power cord plug will only fit into a three-prong safety ground outlet. Do not attempt to fit the plug into an outlet that has not been configured for this purpose. Do not use a damaged power cord. Use only the power cord that comes with your Elo TouchSystems Touchmonitor. Use of an unauthorized power cord may invalidate your warranty.
3. The slots located on the sides and top of the touchmonitor case are for ventilation. Do not block or insert anything inside the ventilation slots.
4. It is important that your touchmonitor remains dry. Do not pour liquid into or onto your touchmonitor. If your touchmonitor becomes wet do not attempt to repair it yourself.

Regulatory Information

I. Electrical Safety Information:

A) Compliance is required with respect to the voltage, frequency, and current requirements indicated on the manufacturer's label. Connection to a different power source than those specified herein will likely result in improper operation, damage to the equipment or pose a fire hazard if the limitations are not followed.

B) There are no operator serviceable parts inside this equipment. There are hazardous voltages generated by this equipment which constitute a safety hazard. Service should be provided only by a qualified service technician.

C) This equipment is provided with a detachable power cord which has an integral safety ground wire and 3-prong connector intended for connection to a grounded safety outlet.

1) Do not substitute the cord with other than the provided approved type. Under no circumstances use an adapter plug to connect to a 2-wire outlet as this will defeat the continuity of the grounding wire.

2) The equipment requires the use of the ground wire as a part of the safety certification, modification or misuse can provide a shock hazard that can result in serious injury or death.

3) Contact a qualified electrician or the manufacturer if there are questions about the installation prior to connecting the equipment to mains power.

II. Emissions and Immunity Information

A) Notice to Users in the United States: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

B) Notice to Users in Canada: This equipment complies with the Class B limits for radio noise emissions from digital apparatus as established by the Radio Interference Regulations of Industry Canada.

C) Notice to Users in the European Union: Use only the provided power cords and interconnecting cabling provided with the equipment. Substitution of provided cords and cabling may compromise electrical safety or CE Mark Certification for emissions or immunity as required by the following standards:

This Information Technology Equipment (ITE) is required to have a CE Mark on the manufacturer's label which means that the equipment has been tested to the following Directives and Standards:

This equipment has been tested to the requirements for the CE Mark as required by EMC Directive 89/336/EEC indicated in European Standard EN 55 022 Class B and the Low Voltage Directive 73/23/EEC as indicated in European Standard EN 60 950.

D) General Information to all Users: This equipment generates, uses and can radiate radio frequency energy. If not installed and used according to this manual the equipment may cause interference with radio and television communications. There is, however, no guarantee that interference will not occur in any particular installation due to site-specific factors.

1) In order to meet emission and immunity requirements, the user must observe the following:

- a) Use only the provided I/O cables to connect this digital device with any computer.
- b) To ensure compliance, use only the provided manufacturer's approved line cord.
- c) The user is cautioned that changes or modifications to the equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2) If this equipment appears to cause interference with radio or television reception, or any other device:

- a) Verify as an emission source by turning the equipment off and on.
- b) If you determine that this equipment is causing the interference, try to correct the interference by using one or more of the following measures:
 - i) Move the digital device away from the affected receiver.
 - ii) Reposition (turn) the digital device with respect to the affected receiver.
 - iii) Reorient the affected receiver's antenna.
 - iv) Plug the digital device into a different AC outlet so the digital device and the receiver are on different branch circuits.
 - v) Disconnect and remove any I/O cables that the digital device does not use. (Unterminated I/O cables are a potential source of high RF emission levels.)
 - vi) Plug the digital device into only a grounded outlet receptacle. Do not use AC adapter plugs. (Removing or cutting the line cord ground may increase RF emission levels and may also present a lethal shock hazard to the user.)

If you need additional help, consult your dealer, manufacturer, or an experienced radio or television technician.



FC Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE



Appendix E

Technical Specifications

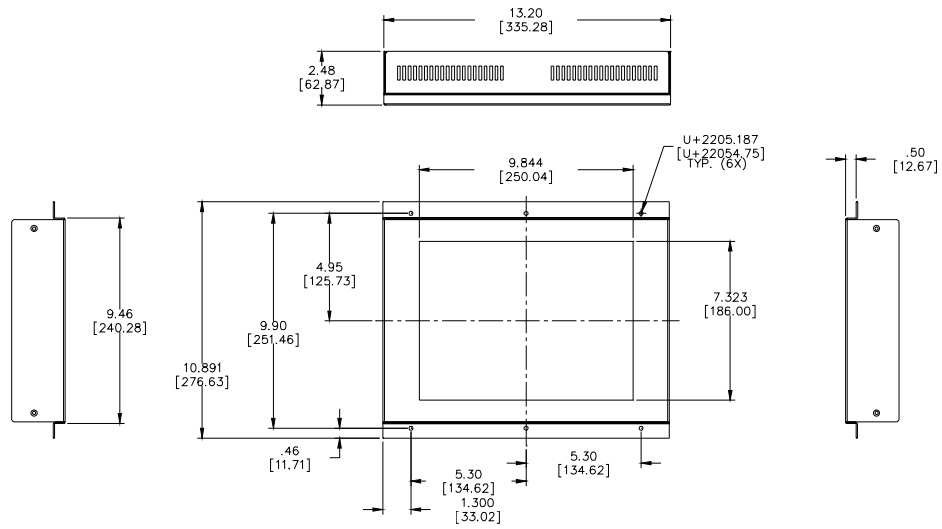
All specifications are subject to change.

Appendix E : Technical Specifications

12.1" LCD Touchmonitor (ETL121K-XPWA-1)

Display Type	Active matrix, thin film transistor (TFT), liquid crystal display	
Size	12.1-inch diagonal 246.0 x 184.5 mm useful screen area	
Pixel Format	800 x 600	
Touchscreen	0.125-inch IntelliTouch, anti-glare Surface acoustic wave (SAW) technology	
Colors	16 million with dithering	
Display Brightness	255 cd/m ² typical	
Back-light Lamp Life	30,000 hours at full brightness	
Viewing Angle	Horizontal Vertical	 =/-70 or 140 degrees total =/-55 or 110 degrees total
Contrast Ratio	300:1 typical	
Display Response Time	20 msec rise, 40 msec delay typical	
Environmental	Operating Temp Storage Temp Humidity	0°C to 35°C -25°C to +60°C 95% non-condensing
Mechanical	Weight Size	10.5lbs. IntelliTouch 11.0lbs SecureTouch See drawings on next page.
Electrical	Input Video Input Power Power Dissipation	VGA/SVGA analog video 100-240 VAC, 50/60 Hz universal 35 watts at maximum brightness typical
Agencies	Safety & EMC	UL, cUL and TUV FCC-B and CE

12.1" LCD Touchmonitor (ETL121K-XPWA-1)

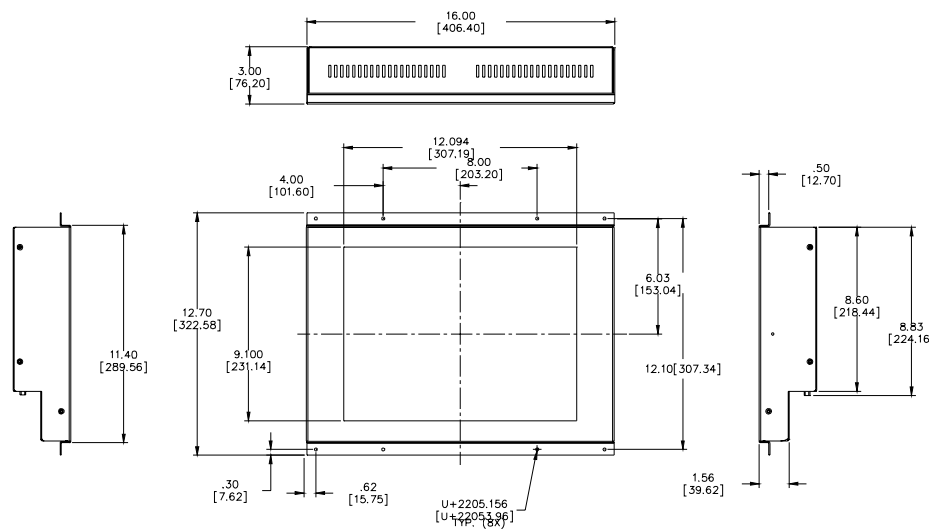


Appendix E : Technical Specifications

15" LCD Touchmonitor (ETL150K-XPWA-1)

Display Type	Active matrix, thin film transistor (TFT), liquid crystal display	
Size	15-inch diagonal 304.1 x 228.1 mm useful screen area 1024 x 768 pixel format	
Pixel Format	1024 x 768	
Touchscreen	0.125-inch IntelliTouch, anti-glare Surface acoustic wave (SAW) technology	
Colors	16 million with dithering	
Display Brightness	190 cd/m ² typical	
Back-light Lamp Life	25,000 hours at full brightness typical	
Viewing Angle	Horizontal Vertical	+/-70 or 140 degrees total +/-60 or 120 degrees total
Contrast Ratio	150:1 typical	
Display Response Time	30 msec rise, 50 msec delay typical	
Environmental	Operating Temp Storage Temp Humidity	0°C to 35°C -25°C to +60°C 95% non-condensing
Mechanical	Weight Size	15 lbs. IntelliTouch See drawings on next page.
Electrical	Input Video Input Power Power Dissipation	VGA/SVGA/XGA analog video 100-240 VAC, 50/60 Hz. Universal
Agencies	Safety & EMC	UL, cUL and TUV FCC-B and CE

15" LCD Touchmonitor (ETL150K-XPWA-1)



Warranty

Except as otherwise stated herein or in an order acknowledgment delivered to Buyer, Seller warrants to Buyer that the Product shall be free of defects in materials and workmanship. The warranty for the touchmonitors and components of the product are: 1 year monitor, 10 years IntelliTouch screen, 5 years Accu-Touch screen, 5 years Controller.

Seller makes no warranty regarding the model life of components. Seller's suppliers may at any time and from time to time make changes in the components delivered as Products or components.

Buyer shall notify Seller in writing promptly (and in no case later than thirty (30) days after discovery) of the failure of any Product to conform to the warranty set forth above; shall describe in commercially reasonable detail in such notice the symptoms associated with such failure; and shall provide to Seller the opportunity to inspect such Products as installed, if possible. The notice must be received by Seller during the Warranty Period for such product, unless otherwise directed in writing by the Seller. Within thirty (30) days after submitting such notice, Buyer shall package the allegedly defective Product in its original shipping carton(s) or a functional equivalent and shall ship to Seller at Buyer's expense and risk.

Within a reasonable time after receipt of the allegedly defective Product and verification by Seller that the Product fails to meet the warranty set forth above, Seller shall correct such failure by, at Seller's options, either (i) modifying or repairing the Product or (ii) replacing the Product. Such modification, repair, or replacement and the return shipment of the Product with minimum insurance to Buyer shall be at Seller's expense. Buyer shall bear the risk of loss or damage in transit, and may insure the Product. Buyer shall reimburse Seller for transportation cost incurred for Product returned but not found by Seller to be defective. Modification or repair, of Products may, at Seller's option, take place either at Seller's facilities or at Buyer's premises. If Seller is unable to modify, repair, or replace a Product to conform to the warranty set forth above, then Seller shall, at Seller's option, either refund to Buyer or credit to Buyer's account the purchase price of the Product less depreciation calculated on a straight-line basis over Seller's stated Warranty Period.

THESE REMEDIES SHALL BE THE BUYER'S EXCLUSIVE REMEDIES FOR BREACH OF WARRANTY. EXCEPT FOR THE EXPRESS WARRANTY SET FORTH ABOVE, SELLER GRANTS NO OTHER WARRANTIES, EXPRESS OR IMPLIED BY STATUTE OR OTHERWISE, REGARDING THE PRODUCTS, THEIR FITNESS FOR ANY PURPOSE, THEIR QUALITY, THEIR MERCHANTABILITY, THEIR NONINFRINGEMENT-

MENT, OR OTHERWISE. NO EMPLOYEE OF SELLER OR ANY OTHER PARTY IS AUTHORIZED TO MAKE ANY WARRANTY FOR THE GOODS OTHER THAN THE WARRANTY SET FORTH HEREIN. SELLER'S LIABILITY UNDER THE WARRANTY SHALL BE LIMITED TO A REFUND OF THE PURCHASE PRICE OF THE PRODUCT. IN NO EVENT SHALL SELLER BE LIABLE FOR THE COST OF PROCUREMENT OR INSTALLATION OF SUBSTITUTE GOODS BY BUYER OR FOR ANY SPECIAL, CONSEQUENTIAL, INDIRECT, OR INCIDENTAL DAMAGES.

Buyer assumes the risk and agrees to indemnify Seller against and hold Seller harmless from all liability relating to (i) assessing the suitability for Buyer's intended use of the Products and of any system design or drawing and (ii) determining the compliance of Buyer's use of the Products with applicable laws, regulations, codes, and standards. Buyer retains and accepts full responsibility for all warranty and other claims relating to or arising from Buyer's products, which include or incorporate Products or components manufactured or supplied by Seller. Buyer is solely responsible for any and all representations and warranties regarding the Products made or authorized by Buyer. Buyer will indemnify Seller and hold Seller harmless from any liability, claims, loss, cost, or expenses (including reasonable attorney's fees) attributable to Buyer's products or representations or warranties concerning same.

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